



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

*[Handwritten signature]*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/669,335

09/25/2003

Yujin Yamazaki

826.1896

4127

21171

7590

06/17/2004

STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER

STULTZ, JESSICA T

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/669,335

Applicant(s)

YAMAZAKI ET AL.

Examiner

Jessica T Stultz

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/25/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0903 and 0504.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: Figures “5a and 5b”, rather the drawings show only Figure 5. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities: the drawings “11a and 11b” are not described in the brief description of the drawings. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuya et al.

Regarding claim 1, Ishizuya et al discloses an optical device comprising (Column 32, lines 34-65, wherein the container “110” holds optical conversion device “100”, Figure 12a): an optical element (Column 23, lines 24-50, wherein the conversion device “100” is an optical readable radiation displacement-conversion device and Column 32, lines 34-65, Figure 12a); a fixing mean for fixing the optical element (Column 32, lines 34-65, wherein the conversion device “100” is fixed to the container “110” by TTS “111”, Figure 12a); a lens focusing a plurality of segments of light transmitted from the optical element (Column 27, line 1-Column 28, line 44, wherein the lenses “56” and “57” focus the light transmitted from the conversion device “100”, Figures 7a-b also shown in Figure 11, as lens “94”); a cabinet provided with light input/output holes (Column 32, lines 34-65, wherein the container is “110” with input and output holes denoted by the windows “112” and “113”, Figure 12a), that accommodates the optical element and the fixing means (Shown in Figure 12a, wherein the container “110” holds the conversion device “100” and fixing means “111”); a heater heating the cabinet (Column 32, lines 34-65, wherein the TTS “111” controls the heating of the conversion device and Column 25, line 54-Column 26, line 2, wherein the heat comes from the infrared rays that pass through the imaging lens “40”, Figures 6a and 12a); a first blocking means made of a light transmitting material for blocking the first light input/output hole (Column 32, lines 34-65, wherein the first blocking means is window “112”, Figure 12a); and a second blocking means mad of a light transmitting material, for blocking the second light input/output hole (Column 32, lines 34-65, wherein the second blocking means is window “113”, Figure 12a), but does not specifically

Art Unit: 2873

disclose that cabinet accommodates the lens. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made for the cabinet to further accommodate the lens for the purpose of making a more compact design and since it has been held that rearranging of parts of an invention involves only routine skill in the art and would not modify the operation of the device. *In re Japikse*, 181 F. 2c 1019, 86 USPQ 70 (CCPA 1950).

Regarding claim 2, Ishizuya et al discloses an optical device as disclosed above, but does not specifically disclose that the first or second blocking means is the lens. However it would have been inherent that the lens be either the first or second blocking means since Ishizuka et al further discloses a lens located before and after the conversion device (Column 31, line 59-Column 32, line 32, wherein the lens “90” is before the device “100” and the lens “94” is located after the device “100”, Figure 11) which would inherently be blocking means to the cabinet for the purpose of converging infrared light and focusing light for an optical readout (Column 31, line 59-Column 32, line 32).

Regarding claim 3, Ishizuya et al further discloses that the second blocking mean is the fixing means (Column 32, lines 34-65, wherein the TTS “111” further acts as an additional blocking means for generating or absorbing heat, Figure 12a).

Regarding claim 4, Ishizuya et al further discloses that the fixing means is applied to the rear surface of the optical element and light can transmit into the optical element (Column 32, lines 34-65, wherein the TTS “111” is applied to the rear surface of the conversion device “100” and light is transmitted into the conversion device, Figure 12a).

Regarding claim 5, Ishizuya et al further discloses that the fixing means has an anti-reflection film for an area into and out of which light transmits (Column 33, line 64-Column 34,

Art Unit: 2873

line 65, wherein the anti-reflection films “131-134 are formed on the pixels or conversion device “100”, Figures 14a-d).

Regarding claims 7-8, Ishizuya et al discloses the optical device as disclosed above and it is further inherent that the fixing means has almost the same thermal expandability as the optical element and the same thermal conductivity of as air, this being reasonably based upon the fixing means controlling the temperature of the conversion device by insulating the device (Column 32, lines 35-15, wherein the TTS “111” controls the temperature of the device “100” and therefore has almost the same thermal expandability as the device) and uniformly absorbing/generating heat as needed to produce a uniform radiation output (Column 41, lines 31-42, wherein the fixing device has almost the same thermal conductivity as air, since it is able to uniformly generate/absorb heat across the device to produce a uniform radiation output).

Regarding claim 9, Ishizuya et al further discloses that optical device comprises a mirror reflecting the spectral components of light separated by the optical element (Column 31, line 21-Column 32, line 31, wherein the mirrors are read-out reflectors “5”, Figures 9a, 10-11).

Regarding claim 10, Ishizuya et al further discloses that the fixing means is a semi-conductor that is transparent in the infrared range (Column 32, line 34-65, wherein the window “113” is transparent to infrared light and is part of fixing the conversion device “100” within the container “110” and can be located on the inner wall of the vacuum, Figure 12a).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuya et al in view of Cao et al.

Regarding claim 6, Ishizuya et al discloses an optical device as disclosed above, but does not specifically disclose that the optical element is a virtually imaged phased array optical

Art Unit: 2873

element. Cao et al teaches of an apparatus for receiving radiation wherein a virtually imaged phase array optical element is used to produce an output light traveling in a direction determined by the wavelength of the input light and to vary the dispersion compensation (Column 3, line 38-Column 4, line 51 and Column 11, lines 8-23, wherein the VIPA "76" is shown in Figure 7).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made for the optical device of Ishizuya et al to further include an optical element that is a virtually imaged phased array optical element since Cao et al teaches of an apparatus for receiving radiation wherein a virtually imaged phase array optical element is used to produce an output light traveling in a direction determined by the wavelength of the input light and to vary the dispersion compensation.

### ***Conclusion***

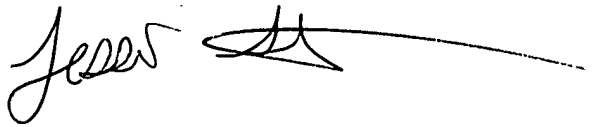
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kashihara and Inoue are cited as having some similar structure to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica T Stultz whose telephone number is (571) 272-2339. The examiner can normally be reached on M-F 8-4:30.

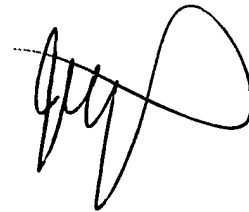
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2873

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jessica Stultz  
Patent Examiner  
AU 2873  
June 8, 2004



JORDAN SCHWARTZ  
PRIMARY EXAMINER